Amendments to the Claims:

This listing of clams will replace all prior versions, and listing, of claims in the application:

Listing of Claims:

1. (Currently Amended): A protein binding assay for measuring inositol 1,4,5-triphosphate (IP_3) in a sample employing as reagents a conjugate of IP_3, a detectable label joined through a bond or linker at the 2-hydroxyl position of said IP3, and as a binding protein a ~~truncated~~ 226 – 578 amino acid extracellular portion of ~~an~~ mouse inositol 1,4,5-triphosphate receptor (IP_3R) having at least about 200 times the affinity for IP_3 than the intact IP_3R, wherein said conjugate and IP3 in the sample compete for binding to said binding protein and the amount of bound or unbound conjugate will be related to the number of binding proteins bound by IP3 in said sample, said method comprising:

   combining in an assay medium said sample, said conjugate and said binding protein and incubating said mixture for sufficient time for complex formation of IP_3 and said conjugate with said binding protein; and

   detecting the bound or unbound label as a measure of the IP_3 present in the sample.

2. (Original): A protein binding assay according to Claim 1, wherein said assay is in a homogeneous format.

3. (Original): A protein binding assay according to Claim 1, wherein said sample is a cellular lysate, and wherein said cellular lysate has been treated to block kinases and phosphatases and prepare said sample for said assay.

4. (Currently amended): A protein binding assay according to Claim 1, wherein said binding protein is of not more than about 600 amino acids and comprises at least amino acids 226 – 578 of the mouse IP_3R Type 1 fused to glutathione-S-transferase.

5. (Canceled).

6. (Original): A protein binding assay according to Claim 1, wherein said binding protein is a fusion protein of up to about 1.5kD amino acids.

7. (Original): A protein binding assay according to Claim 1, wherein said label is a fluorescer.

8. (Original): A method according to Claim 1, wherein the order of addition of reagents is: (a) combining said sample with said binding protein; and (b) adding said conjugate, with incubating after (a) and (b).

9. (Withdrawn): A protein binding assay for measuring IP_3 in a sample using a homogeneous format, employing as reagents a conjugate of IP_3 and an ED of from 37 to 60 amino acids derived from β-galactosidase joined through a linker at the 2-hydroxyl position, and a truncated extracellular portion of an IP_3R having at least about 200 times the affinity for IP_3 than the intact IP_3R, said method comprising:

combining in an assay medium assay components in the following order: said sample, said binding protein, said conjugate and EA, and incubating after each combining for sufficient time for complex formation between said assay components;

adding substrate for said β-galactosidase; and

detecting the turnover of said β-galactosidase of said substrate as a measure of the IP_3 present in the sample.

10. (Withdrawn): A protein binding assay for measuring IP_3 in a sample using a homogeneous format, employing as reagents a conjugate of IP_3 and a fluorescer joined through a linker at the 2-hydroxyl position, and a truncated extracellular portion of an IP_3R having at least about 200 times the affinity for IP_3 than the intact IP_3R, said method comprising:

combining in an assay medium assay components: said sample, said binding protein, and said conjugate, and incubating for sufficient time for complex formation between said assay components; and

detecting the change in fluorescence polarization as a measure of the IP_3 present in the sample.

11. (Withdrawn): A method according to Claim 10, wherein said linker is an aliphatic group of from 4 to 20 carbon atoms.

12. (Withdrawn): A method according to Claim 10, wherein said fluorescer emits at a wavelength greater than about 500 nm.

13. (Withdrawn): A method according to Claim 10, wherein said fluorescer has a polarizability of less than about 60mP.

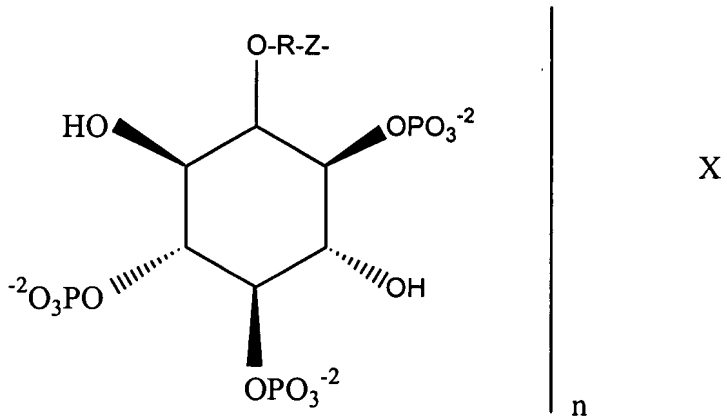
14. (Withdrawn): A protein binding assay for measuring IP_3 in a sample employing as reagents a conjugate of IP_3 and a detectable label joined through a bond or linker at the 2-hydroxyl position, and a truncated extracellular portion of an IP_3R having at least about 200 times the affinity for IP_3 than the intact IP_3R, said method comprising:

combining in an assay medium said sample, said conjugate, said binding protein and a chemical reductant and incubating said mixture for sufficient time for any IP_3 and said conjugate to bind to said binding protein; and

detecting the bound or unbound label as a measure of the IP_3 present in the sample.

15. (Withdrawn): A protein binding assay according to Claim 14, wherein said chemical reductant is a thiol.

16. (Withdrawn): A compound of the formula:



wherein:

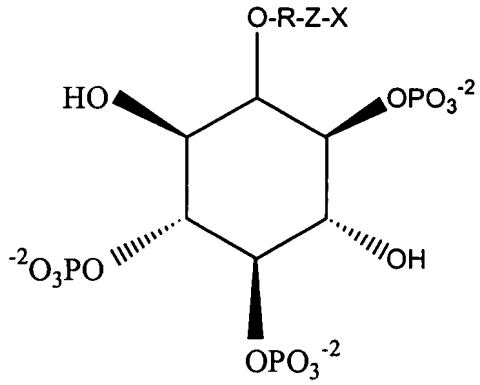
R is a neutral linking group of from 4 to 20 carbon atoms bonded to the oxygen through a saturated carbon atom or carbonyl;

Z is a functionality for linking X to the oxygen at the 2-position;

X is an enzyme donor fragment of β-galactosidase of from 27 to 60 amino acids; and

n is 1 or 2.

17. (Withdrawn): A compound of the formula:



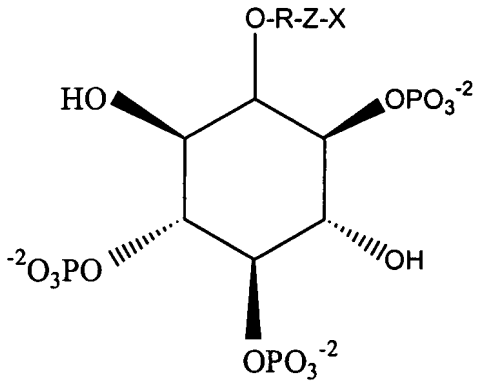
wherein:

R is a neutral linking group of from 2 to 20 carbon atoms bonded to the oxygen through a saturated carbon atom;

Z is a functionality for linking X to the oxygen at the 2-position; and

X is a fluorescer.

18. (Currently amended): A kit comprising a compound



---

wherein:

R is a neutral linking group of from 2 to 20 carbon atoms bonded to the oxygen through a saturated carbon atom;

Z is a functionality for linking X to the oxygen at the 2-position; and

X is a fluorescer, enzyme acceptor for said enzyme donor and a ~~truncated~~ 226 – 578 amino acid extracellular portion of ~~an~~ mouse IP_3R having at least about 200 times the affinity for IP_3 than the intact IP_3R.

19. (Canceled).

20. (Withdrawn): A kit for performing an IP3 assay comprising a conjugate of IP_3 and a detectable label joined through a bond or linker at the 2-hydroxyl position, a truncated extracellular portion of an IP_3R having at least about 200 times the affinity for IP_3 than the intact IP_3R and instructions for performing said assay.

21. (Withdrawn): A kit according to Claim 20, further comprising a thiol reductant.